

Appl. No.: 10/689,784
Amendment Dated January 24, 2005
Reply to Office Action of October 18, 2005

Amendments to the Specification:

Please amend the specification as follows:

On Page 4, please amend the third full paragraph as follows:

The distances separating the mirrors and the characteristics of the materials comprising them are selected so as to define preferably a ~~magnetogenic~~ resonant micro-cavity, especially of the Fabry-Pérot type, or an ~~antimagnetogenic~~ antiresonant cavity to the wavelengths of the photons emitted by the converting means.

On page 6, please amend the last paragraph as follows:

In the example illustrated in figure 2, the device according to the invention comprises, first of all, a substrate 4 to which a lower reflective mirror 5 is ~~solidarised~~ affixed. The upper side of this mirror 5 is ~~solidarised~~ affixed to a layer 6 destined to generate carriers, such as electrons.

On page 7, please amend the first two paragraphs as follows:

The upper side of this layer 6 is ~~solidarised~~ attached to converting means of electron/hole pairs into photons 7. The upper side of these converting means 7 is ~~solidarised~~ attached to a second layer 8 destined to generate carriers of another type to those of the layer 6, for example, holes.

The generating layers of carriers 6 and 8 are ~~solidarised~~ attached to metallic contacts 9 and 10, respectively connected to negative 3-2 and positive 3-1 terminals of the diode. An alternative consists in ~~solidarising~~ attaching contact 9 to mirror 5 or to substrate 4 (possibly through the lower side of substrate 4), when substrate 4 and mirror 5 possess also the property of generating carriers. As is well known by those skilled in the art, when contacts 9 and 10 present selected opposite polarisations, the generating layers of carriers 6 and 8 produce respectively electrons and holes, which will recombine in the converting means 7 by producing photons.

On page 8, please amend the last paragraph as follows:

Lower mirror 5 and upper mirror 14 define in this non exhaustive example, a ~~magnetogenic~~ resonant micro-cavity of the Fabry-Pérot type, in which photons produced in the

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quantic well(s) in directions approximately perpendicular to the planes of the upper and lower mirrors, are transmitted to the outside, the others remaining confined between the mirrors, and especially in the

On page 9, please amend the first full paragraph as follows:

In a variation of this, the upper mirror and the lower mirror could define an ~~antimagnetogenic~~ antiresonant cavity, in which the photons produced in the converting means 7 are forced to remain between the mirrors (practically no light being emitted in a direction substantially perpendicular to the mirror planes).

On page 9, please amend the third full paragraph as follows:

The means of extracting light 13 of the invention communicate with the converting means 7 and the carriers generating means 8 preferably as well as 6. As illustrated in figure 2, the extracting means 13 are preferably realised in the form of a diffracting tridimensional structuration of a part at least of the carriers generating means (layers 6 and 8) and the converting means 7. It is convenient for manufacture that the tridimensional structuration 13 opens at the upper side of the generating layer 8. Furthermore, it is preferable that the part of the structuration which is formed in the generating layer 8 is totally, or at least in a major part separated from the rest of the generating layer 8, which is solidarised attached to contact 10, so as, especially, not to act against the conversion of the photon bearing pairs. To this end, a trench 15 may be made in the whole thickness of the generating layer 8 (or in a fraction only of this thickness), just before the structuration area 13.